

**IN THE ABSTRACT:**

The Abstract as amended below with a replacement Abstract shows added text with underlining and deleted text with ~~strike-through~~.

Please DELETE the Abstract in its entirety and substitute the attached new Abstract.

A method synchronizes a radio communication system divided into radio cells. Data is transmitted in the radio communication system by a multiple access method. Each radio cell thus has a base station for the radio feed of several mobile stations, allocated to the radio cell. A synchronization of the base station is carried out using the received signals from mobile stations in the same radio cell and also in adjacent radio cells. The base station determines at least one pilot signal and signals said pilot signal to the allocated mobile stations in a downwards direction. The allocated mobile stations transmit the signaled pilot signal in an upwards direction to the base station. The base station determines a synchronization value, from the received pilot signals from the radio cell thereof and also from the adjacent radio cells, for a time synchronization and/or for a frequency synchronization on which the base station is synchronized.